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Report of effects of psychopathology in college undergraduate population on scholastic performance over several years. Comparisons were made of scholastic averages of five different types of disordered personalities with those of randomly selected students. With exception of obsessive-compulsive group, results tend to confirm generalization that intellectual performance seems to be little affected by certain types of psychopathology.

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THE CHARACTER AND DEGREE OF PSYCHOPATHOLOGY IN
RELATION TO SUSTAINED INTELLECTUAL PERFORMANCE

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PROBLEM

Psychiatrists are repeatedly confronted with patient complaints of impaired intellectual functioning. This is particularly true in a college setting, where student patients almost universally complain of inability to concentrate, lowered academic performance and anxiety over examinations. It is probably safe to predict that most psychiatrists, asked to formulate hypotheses concerning the effect of psychopathology on intellectual performance, would predict impaired performance proportionate to the character and degree of pathology. The present study is designed to test these subjective impressions on a college population.

A review of the literature reveals two groups of pertinent studies. One group, dealing with the effect of variation in external stress on intellectual performance, has been reviewed comprehensively by Lazarus, et al⁽⁶⁾. Most of this work suffers from an almost total neglect of variables which are a function of the internal organization of the individuals tested. Consequently, individual differences tend to be one of the main findings in studies of this type.

The second group of studies, alert to the foregoing error, have attempted to correlate intellectual performance with internal variables as defined by various psychiatric groups. Hunt⁽⁶⁾ has summarized these findings up to 1944. Greenfield⁽³⁾, more recently, compared a group of college normals with a group of neurotic patients with respect to their performance on certain intellectual tasks while "frustrated" and found no significant differences between the two groups. Fey⁽¹⁾ found clearcut differences between schizophrenics and controls on the Wisconsin Card Sorting Test under different conditions of personal, impersonal, and physical stress. In general, in the studies of this type, schizophrenics are the only pathological group who tend to show consistent differences from controls on intellectual tasks. All of these studies were carried out under laboratory conditions and, to the clinician, there may be considerable danger in generalizing the conclusions reached in them to behavior outside the laboratory situation. Moreover, the tests of performance were, in every instance, sharply discrete temporally, i.e., the performances were measured only within relatively brief spans of time. To the present authors' knowledge only one group of investigators has heretofore measured intellectual performance in a psychopathological group outside the laboratory and over a relatively extended period. Matarazzo, et al⁽⁷⁾ have correlated academic performance over a year's period with various degrees of anxiety and found no significant correlation. The present study utilizes the same technique on a broader psychopathological sample.

METHOD

The population selected for study was all of the undergraduate students applying for psychiatric assistance in the Student Health Psychiatry Section of the Department of Psychiatry of the University of Wisconsin in the four year period of 1950-1953 inclusive. From this group all those with no psychiatric diagnosis were excluded, leaving a population of over 1000. From this population, in turn, the following five experimental groups were randomly selected: (a) 122 patients without regard to diagnosis, (b) 39 personality disorders, characterized by "acting out" behavior, (c) 44 obsessive-compulsive neurotics, (d) 43 incipient psychotics and psychotics, and (e) 59 persons diagnosed as "adolescent reaction", in whom it was felt by the examiners there was no serious pathology. On each of these samples the mean academic grade-point of the group was calculated. The mean period on which the grade-point was calculated for the experimental groups varied from 2.8 to 3.6 academic years. A comparison of the variances within each group was made. The mean

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grade-point of each of these samples was then compared with the mean grade-point of 100 unselected persons from the total population of the university during the same period. In addition, where significant differences were found, the influence of intelligence in accounting for the difference was tested by comparing the experimental group with the control group on the mean score achieved on the American Council on Education Test.

HYPOTHESES

For statistical purposes all hypotheses were framed in terms of the null hypothesis, *i.e.*, that there would be no significant differences when each of the experimental samples was compared with the normal control sample. However, the authors' hypotheses may be framed in positive terms as follows:

(1) *Obsessive-compulsives* will perform significantly better academically than will a random sample of the total student population. This expectation was based upon the personality features of intellectualization, compulsiveness, and strong achievement needs which characterize this group of disorders.

(2) *Personality disorders* characterized by "acting out" will perform significantly poorer than the sample of the total student population. This was anticipated because it was felt that this group, under the stress of impending examinations, would discharge their anxiety tangentially and would tend to study less and value academic achievement less than would a group of normals.

(3) *Psychotics and incipient psychotics* will perform significantly poorer than "normals". This was anticipated because of the clinical impressions of interference with thought processes, overwhelming anxiety, and behavioral disorganization.

(4) *Adolescent reactions* will not differ significantly from "normals". It was felt that this group, being minimally sick from the psychiatric frame of reference, would be roughly equatable to "normals".

(5) A random sample of the total psychopathological population will not differ from "normals". This was anticipated because of the earlier hypotheses that performance in the psychopathological groups would be enhanced in some instances and impaired in others so that these opposing trends would cancel out differences in the total group.

RESULTS

The null hypothesis cannot be rejected except for the obsessive-compulsive group. The latter group performed significantly better than the normal controls and this difference was significant at better than the 1% level of confidence. When the obsessive-compulsive group was compared with the normal on the mean performance on the American Council of Education Test, no significant difference was found; hence, greater intelligence cannot account for the enhanced performance of this group. Analysis of variance within the groups revealed no significant differences.

DISCUSSION

Certain limitations in the design of this study should be noted. First, the pathological populations concerned are those who sought assistance; whether similar pathological populations who did *not* seek help would differ cannot be answered. Second, it might be argued that decrements in academic performance might have been revealed had the period of measurement been restricted to the period of clinical contact, during which the patients concerned were presumably most anxious. However, Matarazzo, *et al.*⁽⁷⁾ have previously demonstrated that anxiety bears no relationship to intellectual performance of this character.

With the foregoing reservations, the results of this study tend to confirm the results of laboratory experimentation, *i.e.*, that character and degree of psychopathology are not predictive of intellectual performance. The exception to this generalization in this study, that of the obsessive-compulsive group, is actually in the direction of enhanced performance. For the authors, the finding that the existence

of psychosis or incipient psychosis and "acting out" personality disorders does not impair academic performance is surprising and contrary to subjective clinical impressions. How can one view such results most usefully?

Hartman⁽⁴⁾ and Rapaport⁽⁸⁾, in discussing the sparing of certain ego functions in psychopathology have proposed the concept of "conflict-free ego spheres". In terms of this hypothesis it might be speculated that the intellectual performances measured in this study are at least comparatively free of conflict and spared the encroachment which is attendant to other areas of behavior in emotionally sick persons. Such an explanation, however, is not congruent with innumerable reports by patients in this study of conflict attendant to academic performance of the obsessive-compulsive group.

Greenfield⁽²⁾ has made similar observations on the concept of "conflict-free" ego spheres in noting the importance of such non-intellectual factors as motivation and attention in performing intellectual tasks. He has proposed the terms "syntonic ego-involvement" and "dystonic ego-involvement" to designate respectively those behaviors which are or are not consonant with the standards of the ego. This theory is certainly attractive when applied to the obsessive-compulsive group, where its implication is that studying and examination behaviors are more syntonic to the obsessive-compulsive ego than to the "normal" ego. This interpretation is in keeping with clinical observation that for the obsessive-compulsive personality, repetitious self-assessment is an important defense. Moreover, successful examination performance probably places a premium upon personality attributes characteristic of the obsessive-compulsive—ritualistic repetition (of facts to be memorized), obsessive concern for detail, great skills in conceptualization, abstraction and verbalization. Finally, the value placed on academic achievement by the obsessive-compulsive seems clinically to be greater than the value to "normals"; the importance of such value in motivating study is probably important.

When this theory is applied to the remaining pathological groups, its usefulness is questionable. While the behaviors measured might, in part, be as useful defensively to these groups as to the obsessive-compulsives and hence ego-syntonic, the clinician would anticipate *a priori* from the reports of patients that they are largely dystonic and threatening; hence it might be expected that performance would be impaired. We can only speculate that, while the threat of these behaviors may be anxiety-provoking, the anxiety provoked is not sufficient to disorganize behavior; indeed, it may be facilitory in some degree. Were the variability of performance in these groups significantly greater than in the normal, it would tend to lend some support to this view. Unfortunately, this cannot be demonstrated in this study.

The authors believe that this work underscores the need for further objective delineation of the ways in which ego functions are affected by psychopathology. It is all too easy for the clinician to mistake phenomenologic patient reports for objectively verifiable behavior. While the usefulness of such information to the clinician may be minimal (concerned as he is largely with *experienced* distress in his patients, not so greatly with their behavior *per se*) it may be helpful to other groups necessarily concerned with psychology of man. Educators, for example, may well pause before assuming too quickly that psychopathology, like some organic pathology, constitutes an adequate explanation for lowered academic performance.

SUMMARY

This paper reports the effects of psychopathology in a college under-graduate population on scholastic performance over a period of several years. Five experimental groups were randomly selected from among undergraduate students seen in the Student Health Psychiatry Section of the University. These were classified as personality disorders characterized by "acting out" behavior, obsessive-compulsive neurotics, "adolescent reactions" in whom it was felt there was no serious pathology, incipient psychotics and overt psychotics as well as a group selected without regard to diagnosis. Comparisons of the scholastic averages of these groups were made with

averages of a randomly selected group of students attending the university during the same period of time.

The obsessive-compulsive neurotics did much better academically than did the random sample of the total student population with this difference statistically significant at better than the 1% level of confidence. The intelligence of these two groups was compared without finding significant difference between them. Comparison of the academic performance of the other experimental groups with the total student sample did not reveal any significant differences in scholastic achievement.

With the exception of the obsessive-compulsive group the findings tend to confirm the generalization derived from laboratory experiments that intellectual performance seems to be little affected by certain types psychopathology. The personality characteristics of the obsessive-compulsive individual appear to be syntonie with intellectual achievement of an academic type and the findings are thus compatible with clinical observation. The subjective complaints of impaired intellectual functioning by members of the other groups are not borne out by objective measurement of their academic accomplishments. Theories are presented relating to sparing of some ego functions in emotional illness to explain these findings but their relative lack of usefulness points out the need for further objective study of the ways in which ego functions are affected by psychopathology.

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